The Orchadian

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Official Journal of the Australasian Native Orchid Society Inc.

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Caladenia hirta subsp. *rosea* Photo Andrew Brown

The Orchadian

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Please include your contact information for communication and publication.

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9th AUSTRALASIAN NATIVE ORCHID CONFERENCE AND SHOW
'GET GOING, GET GROWING'
21 – 26TH AUGUST 2019
STRATHPINE, QUEENSLAND

ANOS Inc. in association with ANOS KABI Group Inc. invite all orchid growers to their 9th Triennial Show and Conference in Strathpine, Brisbane in 2019. The organisers are planning a program of speakers and workshops to provide an interactive learning experience covering many aspects of Australasian orchids. Come along and join in the fun, expand your knowledge, catch up with old friends and make new ones.

The orchid show will have floor and bench displays, with Champion Hybrid and Champion Species both receiving $500. There will also be a photographic competition.

Plant sales and display of botanical art.

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Bill Murdoch, who first wrote to native orchid growers with the idea of a new society, was granted a life membership in 1968, five years after the formation of ANOS. He travelled four hours each way to attend council meetings. The President, Eric Gordon, reported that *The Orchadian* was produced five times per year in 1968 despite the difficulty of securing suitable articles (*The Orchadian* 3:2 p. 3 1968). The Council felt a 'need for articles of a horticultural and general nature', a sentiment that has been echoed by presidents and editors to the present day. In the period 1968–9 there was a mixture of reports on field trips and cultivation, along with many descriptions of new species and other taxonomic proposals for *Pterostylis*, *Caladenia* and *Diuris*, which lead to a concern about lack of balance and interest for most readers.

A technique for aseptic orchid seed culture for the amateur (Paterson) and one using non-aseptic culture in a pot with *Sphagnum* moss and root tips (Blombery) were described, and I tried the latter, but with no success. In 1968–9 the much-desired field observations were well supplied with reports of the orchids of central west New South Wales (Ingram and Whitehead), a North Queensland orchid safari (Young) and climb of Mt. Bartle Frere (Lavarack). There were also interesting accounts of New Guinea *Paphiopedilum, Saccolabium rhopalorrachis* (accepted name now *Trachoma rhopalorrachis*), *Thrixspermum amplexicaule,* and north Queensland *Dipodium pandanum* (Howcroft). A smaller percentage of ANOS members are engaged in field trips today, and perhaps few of those who go are writing reports to share with members. Despite this trend, the March issue has two excellent field excursion reports and a good range of articles on horticultural aspects and orchid genera.

The culture of terrestrial orchids and understanding of their specialized habitats has come a long way and there are two outstanding contributions from Helen Richards and Andrew Brown, leaders in those fields. The distribution of Australian orchids is recorded in general terms, but for more remote regions of such a large territory there are many uncertainties and unknowns. *Dendrobium teretifolium* and its variations are found over a range of 3000 km north to south on the eastern continental fringe. Gerry Walsh has extended the printed record of finer scale distribution and variations of plant habit and flower colour, which will interest the increasing number of growers of these plants, and provide necessary information for detailed review and assessment of *Dendrobium* section *Rhizobium*.

There have been various treatments over decades of nomenclature in this group of terete leaved plants. ANOS Inc. generally follows the World Checklist of Selected Plant Families (WCSPF) for genera and species except where there is published information available that suggests otherwise. There are and always will be disparities between different plant lists, which are updated at different times. Some orchids are not sufficiently researched to make an evidence based decision on listings and the list compilers have to wait for authoritative data to make changes when it becomes available. Some of the terrestrial orchids discussed in this issue are not currently listed as accepted in the WCSPF, as more information is required.

I am very pleased with the articles of regular contributors Roslyn Capell, Callyn Farrell, David Butler and Neil Anderton, and our other dedicated writers who, despite time constraints, respond positively to requests and invitations, and are contributing to the almost 60 year history of Australian and Australasian orchids. Spontaneous offerings are few but are especially welcome. I welcome Henry Wilson to the writing group, with his experience in breeding the popular *Dendrobium* Warringah.

It is also time to thank a number of people who work behind the scenes to ensure that *The Orchadian* is produced with as few problems as possible. Keith Riseley is a key contributor with implementation of the editors layout at the final stage, Sheryl Lawson has acted as the assistant editor for almost four years, and there is an expanding group of traditionally anonymous peer reviewers and proof readers, notably Roslyn Capell, attempting to keep errors to a minimum.

Peter Adams

President's Report

Members of council along with ANOS KABI are spending long hours planning and preparing for the ANOS Conference and Show in August this year at Strathpine, Queensland. If you have not yet committed to attending, please consider and register as soon as possible to help with planning. The event has always been an enjoyable time of friendship and learning.

The focus of this conference is on growers in particular, with an emphasis on expanding your knowledge of what is happening with the culture of terrestrials and epiphytes, and with hybridising. Details for registering, and a link to the show schedule, are available in this edition of *The Orchadian*.

We are very excited that some very prominent and experienced growers from all the eastern states have agreed to talk. Presenters from Victoria include Helen Richards, who will explore the culture of terrestrials, Neil Anderton, who will report on a terrestrial conservation project and David Cannon who is well qualified to speak on the history of *Dendrobium* hybridising. Robert Reitano from Queensland will present his extensive experience growing and breeding warm growing dendrobiums. Callyn Farrell (DUNO) from New South Wales will share insights on culture and hybridising, particularly of terete dendrobiums. An update on the new classification of *Dendrobium bigibbum* will be provided by Peter Adams. Roslyn Capell, a highly experienced ANOS and AOC judge in New South Wales, will lead the session on Aeridinae (Sarcanthinae). Noel Grundon, a past Editor of *The Orchadian*, will reflect on the legacy and future of our journal. Look out for further announcements of speakers.

As well as the opportunity to expand your collection by purchases from the commercial vendors, the show will showcase warmer growing orchids from Queensland, and a display of botanical art. Please take note of the details for the photography competition and get your cameras out during this flowering season. We encourage everyone, where practical, to consider supporting the show by entering flowering plants. We also ask ANOS groups to consider putting in a stand. Please contact the secretary Rick Winch for further details. Cut flowers will be judged. As well as the conference opening on Thursday night, the dinner on Saturday evening is an opportunity to mix with other conference delegates, and will include a plant auction.

I am pleased to announce the judging of the Ira Butler trophies for 2018 has been completed and I am informed by the Secretary, Irene Chalmers that the winners are:

Ira Butler Trophy for Best Australian Hybrid: *D.* Jayden 'Sheen' grown by Henk van den Berg.

Bill Murdoch Trophy for Best Australian Species: *Dendrobium calamiforme* (syn. *D. teretifolium* var. *fasciculatum*) grown by Emil Dallmer.

G. Hermon Slade Trophy for Best Australasian Hybrid: *Dendrobium* Nancy Fairfax 'Leeann' grown by Stephen Lee.

G. Hermon Slade Trophy for Best Australasian Species: *Dendrobium spectabile* 'Patricia'.

Congratulations to all the winners and we encourage everyone to submit their plants to be considered in the 2019 season.

Best wishes to all ANOS members and have a great flowering year. Looking forward to seeing you in Strathpine in August.

Sheryl Lawson

Correction:

The photo supplied for ANOS award 314, *Dendrobium* Jayden 'Greta' in *The Orchadian* 19:6 p. 282 was incorrect. Photos of the correct plant were published in *The Orchadian* 19:5 p. 234 and back cover, as part of the Kempsey Show report.

Orchids of Western Australia's Eastern Granites (Lake Johnston to Balladonia)

Text and photos Andrew Brown
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As you travel east from Perth towards Hyden and beyond the annual rainfall drops steadily, and the further east you go the more intermittent and unreliable it becomes. In the area between Hyden and Balladonia average annual rainfall can be as low as 280 mm compared to 733 mm in Perth, and in some years can be even lower. This is not ideal for native orchids and means that over much of this area only the hardiest of species can survive. There are, however, places that provide habitat microsites for orchids. These are the granite outcrops which capture the often meagre rainfall in soil pockets and run off areas and enable an astonishing 44 orchid species to flourish.

In this article I will cover six of my favourite eastern granite outcrops found between Lake Johnston and Balladonia and will describe some of the orchids that grow on them. The approximate positions of these outcrops are shown in Figure 1. The closest is Scamp Rock which is about 452 km in a straight line east from Perth, and the furthest is Breeboorinia Rock about 725 km east from Perth. You can get to some of these rocks by ordinary car but a 4WD is needed to get to others.

The best time to visit these rocks to see orchids is between August and September, when up to 34 species can be seen in flower. Although not as numerous, orchids can also be seen at other times of the year, with some flowering as early as April and others as late as November.

The nomenclature used in this article follows that of the Western Australian Herbarium.

Scamp Rock

The first of the six granite outcrops encountered when travelling from the west to the east is Scamp Rock. Situated on the western shore of Lake Johnston, it is 176 km east of Hyden and about 7 km south-east of the Hyden-Norseman Road via a rough 4WD track. Twenty two orchid species have been found on this rock. Flowering is spread over at least nine months of the year with *Corunastylis fuscoviridis* found as early as April and *Spiculaea ciliata* as late as December.

Seven species of *Pterostylis* are known to occur on Scamp Rock, with the distinctive *Pterostylis allantoidea* found growing in rare colonies in moist soil pockets. An interesting feature of the orchid is that its flower is green when it first opens but turns brown as it matures. There are also at least seven species of *Caladenia* on the rock. One of my favourites is the widespread *Caladenia roei*, which is common on granite outcrops east of Hyden and is particularly abundant on Scamp Rock where it often forms clumps of up to ten or more plants. The very common, widespread *Caladenia hirta* subsp. *rosea* is also found scattered over the rock. Flowers vary in colour from pale to deep pink. Another common orchid on Scamp Rock is the tiny *Caladenia pachychila*. It sometimes hybridises with the equally common *Caladenia dimidia* to produce flowers that are intermediate in morphology. A less common spider orchid found on the rock is the unusual *Caladenia mesocera* which grows in a few seasonally wet soil pockets. Its unusual flowers, with their insect-like labellum, contrast markedly with those of other *Caladenia* species.

Map of Eastern Granites.

Breeboorinia Rock

Lake Rock

Mt Newmont

McPherson Rock

The second of the granite outcrops that you will encounter as you travel east is McPherson Rock. It is situated on the western side of the Coolgardie-Esperance Highway about 30 km south of Norseman and about 100 km east of Scamp Rock and is an easy rock to get to by ordinary car. In a good season as many as 20 orchid species can be seen here.

A common *Caladenia* species found on McPherson Rock is *C. microchila*. In years of good rainfall hundreds of plants can be seen growing in clumps or small groups all over the rock. *Caladenia microchila* is often sympatric with *C. sigmoidea* and hybrids are sometimes found. Once included in *Caladenia* (and still considered by some to be a member of that genus) the dainty *Ericksonella saccharata* is found scattered over the rock and is also abundant in surrounding woodlands. It flowers a bit earlier than most other orchids on the rock and is often at its best in the first week of August. Another common orchid on McPherson Rock is the widespread *Pheladenia deformis* which often grows in clumps or loose colonies. In Western Australia the species is found over a huge geographic range from north of Kalbarri to Israelite Bay. Several members of the *Pterostylis rufa* complex are also found on McPherson Rock, the most common being *P. roensis*. It flowers later than most other orchids in the area and can be seen in full flower in mid-October. McPherson Rock is the most easterly known location for the widespread *Spiculaea ciliata*. In reaching its peak in mid to late-November it is the last of the orchids to flower on the rock.

Mt Ridley

The third granite outcrop is Mt Ridley, situated about 40 km north-east of Scaddan and about 100 km south, south-east of McPherson Rock. It can usually be accessed by ordinary car but I would not recommend trying following heavy rain. It is one of my favourite granite outcrops to view orchids with 31 species found on and near the rock.

There are eight *Caladenia* species found on Mt Ridley, with one of the most common being *Caladenia longicauda* subsp. *rigidula*. In good seasons hundreds of plants can be found under the sheoaks surrounding the rock. Mt Ridley is one of the best places to see the beautiful blue flowered *Cyanicula nikulinskyae*. Although most abundant in the season following summer fire, at least a few flowering plants can be found every year, growing in shallow soil pockets on the rock. The widespread *Diuris decrementa* is found in seasonally wet areas on Mt Ridley and in some places is very common. It is one of three *Diuris* species found on the rock, the other two being *D. hazeliae* and *D. pulchella*. There are nine *Pterostylis* species found on Mt Ridley, perhaps the most common being *Pterostylis parva* which grows in large colonies in mossy soil pockets. Mt Ridley is a great place to see *Pterostylis zebrina*. This member of the *Pterostylis rufa* complex grows in the shallowest of soil pockets on otherwise solid rock. Another greenhood, *Pterostylis sargentii,* is common in deeper soil pockets.

Breeboorinia Rock

The fourth and most easterly of the six granite outcrops is Breeboorinia Rock, situated on Parmango Road about 100 km north-east of Condingup and 113 km east of Mt Ridley. Following good seasonal rainfall up to 22 orchid species can be seen here.

The beautiful *Diuris pulchella* is one of three *Diuris* species on Breeboorinia Rock, and following reasonable winter rainfall, large colonies can be found in shallow soil pockets all over the rock. In contrast, the bright yellow *Diuris concinna* is known from a single colony near the north-west corner of the rock. Finding this orchid on Breeboorinia Rock in 1996 came as a huge surprise as, at that time, the next known population was over 100 km to the south. This highlights the island nature of these inland rocks which contain localised seasonally damp habitat that support orchid species otherwise found in much higher rainfall areas. Since its discovery on Breeboorinia Rock, *Diuris concinna* has been found 90 km further north on Afgan Rock. Surprises did not stop with finding *Diuris concinna*. We

Caladenia longicauda subsp. *rigidula*

Diuris hazeliae

Pterostylis allantoidea

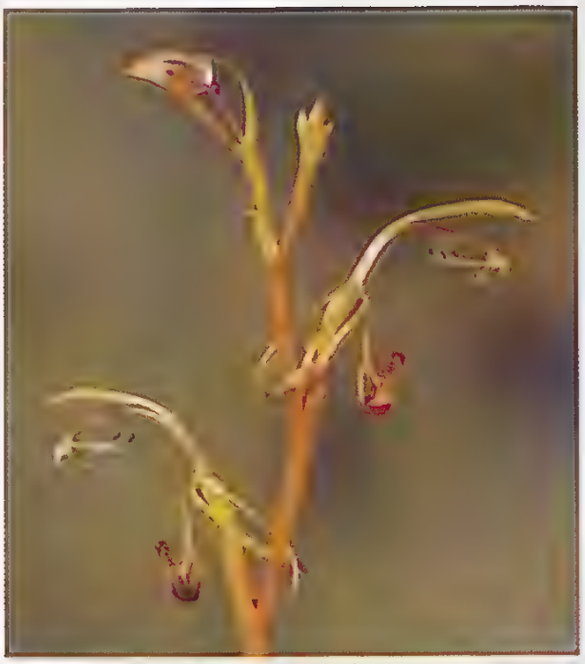
Caladenia roei

Caladenia sigmoidea

Caladenia pachychila

Caladenia × spectabilis

Caladenia mesocera



Spiculaea ciliata

Diuris hazeliae

Diuris pulchella

Prasophyllum gracile

Caladenia voigtii

Caladenia attingens subsp. *effusa*

Diuris hazeliae aberrant form on Lake Rock

Cyanicula nikulinskyae

Ericksonella saccharata

Pterostylis zebrina

Pterostylis vittata

also located several populations of *Cyrtostylis robusta* on Breeboorinia Rock. Like *Diuris concinna*, this species was previously known from much further south. Also like *Diuris concinna* we have subsequently found it even further north on granite outcrops near Balladonia.

There are seven *Caladenia* species found on Breeboorinia Rock. One that is always a delight to see is *Caladenia sigmoidea* which is also common in surrounding woodlands. It is quite an early flowerer and is at its best in early August. Surprisingly, given the distance from its normal sandy coastal habitat, *Caladenia latifolia* is common on Breeboorinia Rock where it forms some very large colonies. In this area it sometimes crosses with *Caladenia flava* to produce very colourful offspring. A common orchid on and near Breeboorinia Rock is *Cyanicula aperta*. Plants are found in shallow soil pockets on the rock and also in the surrounding woodlands.

Lake Rock

We are now travelling into very remote country to the fifth granite outcrop. Locally known as Lake Rock, it can only be accessed by 4WD via rough tracks. It is worth the effort as the rock delivers some amazing views over a large lake system and, following reasonable winter rainfall, has as many as 13 different orchid species on it. This rock is situated about 75 km south-west of Balladonia and about 21km north-west of Breeboorinia Rock.

Growing in open shallow soil pockets all over Lake Rock are colonies of the beautiful *Diuris hazeliae*. It was once thought to occur only in the Western Australian wheatbelt and adjacent goldfields, but we now know it to also be common on rocks between Beacon and Balladonia. An unusual form of this orchid with its petals pointing down instead of up is found on Lake Rock.

Perhaps the most common orchid on Lake Rock is *Microtis eremaea*. This is a widespread inland species which can be found on granite outcrops between Cue and Balladonia. Many thousands of plants can be seen in large colonies. Another orchid that is common on Lake Rock is *Prasophyllum gracile*. It is one of the most widespread Western Australian orchids and can be seen as far north as Shark Bay and as far east as Eyre. Most years many hundreds of plants can be seen scattered over the rock. In good seasons *Pterostylis setulosa* can be seen in large colonies. It is found between Kalbarri and Balladonia with a disjunct population on Mt Augustus. This recently named species is without a doubt the most widespread and common member of the snail orchid complex found in Western Australia and is also widespread in South Australia. One of the most common orchids found in the area covered by this article is *Pterostylis mutica*. It can be seen in a range of habitats including woodlands, shrublands, salt lake margins and of course granite outcrops. The species grows in shallow soil pockets on Lake Rock and in deeper soils in surrounding woodlands.

Mt Newmont

The last but certainly not the least of the six granite outcrops is Mt Newmont, which is situated about 80 km south-west of Balladonia and about 10 km west of Lake Rock. Access is via a rough track running west from Parmango Road and you will need a 4WD to get to the rock. Despite the often poor rainfall in this area, some 20 orchid species thrive here.

When I first visited Mt Newmont in 1996, I was in for a huge surprise. The rare *Caladenia voigtii*, which at that time had only been seen in a handful of areas, all of them much further south-west, was not only present but grew in hundreds all over the rock. It is one of six *Caladenia* species found on Mt Newmont. Surprises did not end with *Caladenia voigti,* as we also found at that time an undescribed subspecies of *Caladenia attingens* growing in small groups in wetter soil pockets on the rock. This orchid has since been found elsewhere and has now been formally named *Caladenia attingens* subsp. *effusa*, its subspecific name referring to its spreading lateral sepals. Other subspecies of *C. attingens* have up-curved lateral sepals.

Caladenia flava is one of Western Australia's most common, widespread and adaptable orchids but in inland areas is confined to isolated granite outcrops. It is not uncommon to find just one or two colonies of this orchid on each rock, each colony containing dozens or even hundreds of plants with flowers that are identical in colour and form. It is thought that this uniformity in morphology is the result of plants multiplying asexually through the production of more than one tuber each year. Given their size, each colony is potentially dozens or even hundreds of years old. Mt Newmont is the most north-easterly known location for *Leptoceras menziesii*. The orchid grows in large colonies in wetter parts of the rock but, in the absence of fire, produces very few flowers most years.

Two *Thelymitra* species are found on Mt Newmont, the most common being *Thelymitra antennifera*. The orchid grows all over the rock, often forming large colonies. The second is the widespread *T. petrophila* which, in good seasons, can be abundant. As per my previous comments, Mt Newmont is the most north-easterly known location for a number of Western Australian orchids, and *Eriochilus pulchellus* is another of these. Given that it is the same species that occurs in the much higher rainfall lower south-west in places like Walpole and Pemberton, it is amazing that it survives in such an arid inland area. Plants are found scattered in shallow soil pockets on the rock, but you need to be there early in the season as it flowers in April and May. Like *Eriochilus pulchellus*, *Pterostylis vittata* is mostly found in the high rainfall lower south-west but has an extension into the arid zone on inland granite outcrops north of Esperance. Plants are found in flower in April and May.

Another early flowering orchid found on Mt Newmont is the diminutive *Corunastylis fuscoviridis*. The species is subject to controversy as some consider it to be synonymous with the Eastern Australian *Corunastylis nigricans* (also known as *Genoplesium nigricans*). However, the two taxa are quite distinct, with *C. fuscoviridis* having flowers that are a different colour and shape to those of *C. nigricans* which is confined to a few coastal areas in South Australia. The Western Australian Herbarium (but not WCSPF) currently recognises *Corunastylis* as distinct from *Genoplesium*. *Corunastylis fuscoviridis* has been found in full flower on Mt Newmont in early April.

Although in places of low and often unreliable rainfall, many orchid species are able to thrive on isolated granite outcrops between Lake Johnston and Balladonia. Getting to them is sometimes difficult but certainly worth the effort as, apart from the great display of orchids, they provide some amazing views, often over large inland salt lakes and pristine woodlands. They also provide some great places to camp where you can spend the evening sitting by a warming fire discussing the day's adventures. If you get the opportunity, I thoroughly recommend that you visit some of these rocks as I am sure you will not be disappointed.

Andrew Brown is a conservation biologist, taxonomist, author and authority on Western Australian orchids.

Thelymitra petrophila

Table 1. List of species and their distribution.

Genus/species	Scamp Rock	McPherson Rock	Mt Ridley	Breeboorinia Rock	Lake Rock	Mt Newmont
Caladenia						
attingens subsp. *effusa*			√			√
dimidia	√					
flava subsp. *flava*	√	√	√	√		√
hirta subsp. *rosea*	√	√	√	√		
horistes			√	√		
latifolia				√		
longicauda subsp. *rigidula*			√			
mesocera	√					
microchila	√	√	√	√	√	√
pachychila	√	√	√	√	√	√
roei	√					
sigmoidea		√	√	√		√
voigtii						√
Corunastylis						
fuscoviridis	√	√	√	√	√	√
Cyanicula						
aperta			√	√		
nikulinskyae			√			
Cyrtostylis						
robusta			√	√		
Diuris						
concinna				√		
decrementa			√			
hazeliae	√	√	√	√	√	√
pulchella			√	√		
Ericksonella						
saccharata	√	√	√			
Eriochilus						
dilatatus subsp. *undulatus*			√			
pulchellus		√	√	√	√	√
Leptoceras						
menziesii						√
Microtis						
eremaea				√	√	√
eremicola	√	√	√			√
graniticola	√	√				
Pheladenia						
deformis	√	√	√			
Prasophyllum						
gracile	√	√	√	√	√	√
Pterostylis						
allantoidea	√	√	√	√	√	√
insectifera	√					
mutica	√	√	√	√	√	√
parva			√			
recurva			√			
roensis	√	√	√	√	√	√
sargentii	√		√			
setulosa	√	√	√	√	√	√
tryphera	√					
vittata			√	√	√	√
zebrina			√			
Spiculaea						
ciliata	√	√				
Thelymitra						
antennifera		√	√			√
petrophila	√	√	√	√	√	√

Diuris in a Victorian Shadehouse, Spring 2018

Text and photos Helen Richards
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They start flowering in late winter. A bright yellow flower, marked with purple breaks the greens and browns of autumn and winter flowering orchids. *Diuris fucosa*, what a spectacular beginning to *Diuris* flowering in the shade house. They flower sequentially until late December, with many tones of yellow, brown, purple and white. The final species to flower, *D. drummondii,* is as spectacular as the first, but in a different way. The flowering stems are so tall that I have great difficulty getting them into the car without bending them when I am transporting them to the ANOS Victoria December meeting, even when the pots are placed on the floor behind the front seat. It is not because I have grown them in the shade. They are tall, very tall and robust. However I do stake the stems for transport, not something that happens in their natural environment.

Let me share the *Diuris* season with you. Let's call it the yellow season, as *Diuris sulphurea* comes to mind as a good example of *Diuris*.

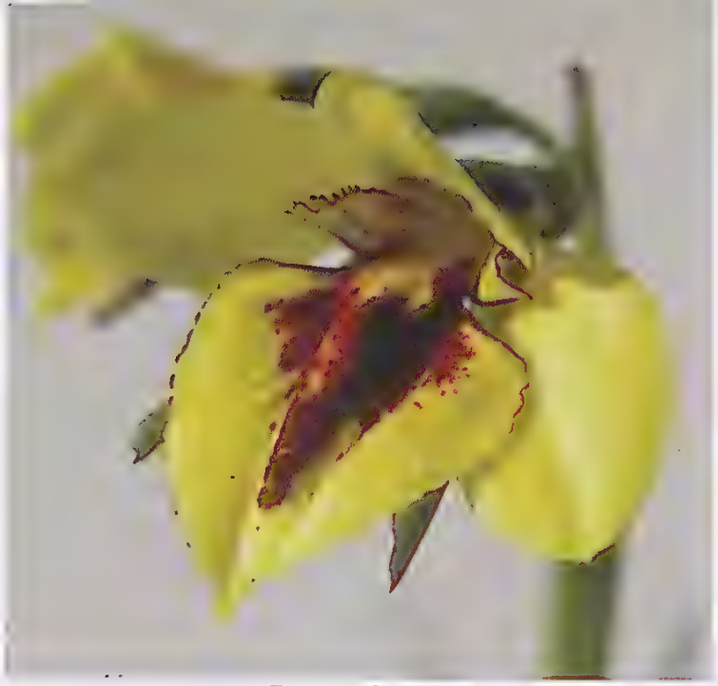
I will go back to the first flowering *Diuris* in my shade house, D. *fucosa*. This was only described in 2006. It is a favourite, up there with the best. Apart from brightening up late winter, it has such beautiful almost purple markings on a good yellow background. Looking up its description, it is known from two sites in New South Wales. I was fortunate to be given several plants in 1999 to grow, and have since been doing my best to propagate them. They respond to having their first new tubers removed around mid October, by usually growing a second replacement tuber.

Having only few plants, it is always a hard decision as to whether tuber-remove or pollinate. The ANOS Vic. seed-raising group, under the direction of Richard Thomson, had initial problems germinating the seed but now has had success. In 2009 I sent seed to Andrew Paget in New South Wales to try, and he sent me back a flask from which I managed to grow one seedling. Since then I have kept my original plants and seedling plant separate, and propagated from them. Richard Thomson has now also had success in growing them from seed, so we have a wider choice of flowers for cross-pollination. After cultivating these plants for 20 years, I still have not generated a huge number. I have given some away when my numbers have exceeded about four plants, and hopefully in the near future they will be more widely seen in cultivation as Richard's seed group become more successful.

Moving into late August and early September, the next *Diuris* coming into flower in my shade house is *D. brumalis* from Western Australia. This is an easier plant to grow and propagate, however never become complacent, and share plants with friends. I managed to lose all of mine and was very pleased to be able to beg some back from Neil Anderton. They have spaghetti-like tubers and increase in numbers, so should be as freely available as *D. orientis*.

Hard on their heels are the flowers of *D. corymbosa*, another Western Australian species. This year I photographed both and compared the flowers closely. Yes, I could see the difference, especially in the dorsal sepal and midlobe of the labellum. *D. corymbosa* also has spaghetti-like tubers, and is colony forming like *D. brumalis*.

The eastern Australian sister species, *D. orientis* has the common name of wallflower *Diuris*, its colourings resembling those of a wallflower. This is another species which is a colony former, with spaghetti-like tubers. They flower best in cultivation if the plants are not disturbed every year, so that the spaghetti forms into clumps. The more spaghetti pieces being joined together, the more likely a flower will form. They also flower much better in the wild after a fire, so maybe we should try storing the dormant tubers for two weeks with banana skins to see if that makes a difference to the flowering rate, as with *Leptoceras*



Diuris fucosa

Diuris brumalis

Diuris corymbosa

Diuris orientis

Diuris maculata

Diuris chryseopsis

Diuris behrii

Diuris conspicillata

Diuris tricolor

Diuris micrantha

Diuris alba

Diuris punctata

menziesii. By separating the spaghetti into single pieces, they can be shared further, but the resultant plants are less likely to flower for a couple of years.

I have skipped over the solitary species, *D. maculata* from New South Wales, this species being spotty or blotchy as its name infers. It flowers early in September. No spaghetti below ground here, just spherical shaped tubers which only occasionally multiply for me. *Diuris chryseopsis* and *D. behrii* also flower at this time. Another challenge is to work out which is which. The books say that *D. behrii* is larger and has a deeper orange colouring on the labellum.

Diuris basaltica and *D. gregaria* also flower around this time. *Diuris basaltica*, another solitary species and endangered species, is carefully cross pollinated with flowers from others, and the seed collected and given to Karen Lester from the Department of the Environment, Land, Water and Planning (DELWP) for use in their successful propagating program. *Diuris gregaria* and *D. basaltica* are recently described species, both small and with similarities to *D. chryseopsis*.

Diuris laxiflora from Western Australia flowers in mid September and has a pretty little flower, a deep yellow with the labellum callus outlined in brown, as have several other Western Australian species. It steadily multiplies, although my numbers declined to just one tuber at one stage. However I have now managed to multiply them up to nine tubers currently.

What else is out at this stage? *Diuris conspicillata* from Western Australia makes a lovely display in September. It has yellow flowers with dark blotches making it look like it is wearing spectacles. Its tubers are long, but not quite as spaghetti-like as the others, and are gradually multiplying up.

Diuris tricolor is another different looking species from northern New South Wales and southern Queensland which comes into flower at the end of September. It is mainly yellow with some white and purple, justifying its specific name, and it has long lateral sepals.

The Western Australian species *D. micrantha* has tiny flowers on a tall stem, 'micro' being a very good description. Les Nesbitt gave me a flask when he visited Melbourne years ago, and I managed to grow one plant from that flask. It is now up to three plants. My dilemma at flowering time is whether to pollinate or tuber-remove. This year, having three plants, I did both. Hopefully it will have made an extra tuber and I will have harvested the seed from one capsule.

By this time, the first of the purple and white, *D. alba*, is flowering. These lovely solitary species were given to me as plants or flasks by Peter Kiernan when he was diagnosed with terminal cancer four years ago and was putting his house in order by distributing his terrestrial collection to various growers who could continue his work. The tubers in his flasks were large already, so no problem to grow on when deflasked. They were *D. maculata*, *D. tricolor*, *D. curta*, *D. conspicillata*, *D.* × *nebulosa*, *D. alba*, *D. punctata* and *D. fragrantissima*. Each of these species has grown and flowered well, and I propagate them by tuber removing and cross pollinating the flowers, the seed going to the ANOS Vic. seed raising group and the Australian Orchid Foundation seed bank. Tuber removing is messy, but it is such a reliable way of propagating solitary *Diuris* provided it is done at the right time, i.e. the plants are large enough and they are can be grown on for long enough to make a second tuber.

With the flowering of *D. punctata*, true purple is introduced into the colours in the shade house, which happens as *D. sulphurea* is looking at its best. *Diuris sulphurea* is a must in any collection. It has sulphur yellow flowers with distinctive brown spots on the lateral petals. *Diuris sulphurea* multiplies and flowers well from the large tubers. Peter Kiernan also passed on to me *D. sulphurea* plants from several localities, so with the ones I already had they make for a lovely display. The recently described *D. curta* flowers about this time, as does the natural hybrid *D.* × *nebulosa*, the yellow/purple cross whose flowers are

Diuris × nebulosa

Diuris daltonii

Diuris fragrantissima

Diuris drummondii

a mixture of both colours merging together. *Diuris daltonii* was germinated in flask more recently by the seed group and shared around. Mine flowered this year and the first question was how to distinguish them from *D. punctata* but from my close-up photos and studying the books, I could see the differences as described by Jones (2006).

The second last species to flower in my collection is *D. fragrantissima*. This highly endangered species has been brought back from the brink, with just over 30 left in the original site at Sunshine in Victoria. That site is now very well managed by John Bradford under the direction of Karen Lester, with assistance from ANOS Vic. volunteers. '*D. frag*', as it is affectionately called, is now being very successfully grown from seed, symbiotically. Plants have been reintroduced at Sunshine in Victoria, and thousands more are ready to plant back into the wild in suitable habitats. My plants are used as a source of seed for propagation. *Diuris fragrantissima*, as its name implies, has a lovely sweet perfume. I pollinate flowers and tuber-remove plants. The more widely these plants are spread around, including to amateur growers such as myself, the more secure they are.

The final *Diuris* in my collection is *D. drummondii*, a swamp lover from Western Australia. The flowers come out in late November and early December, and are a bright yellow, with the callus outlined in brown. These are growing vigorously late in the season while others are drying off, so in cultivation they must be well watered until at least late in December. Their tubers are a cross between spaghetti shaped and round, and slowly multiply. I have only been growing them for four years so have not had a huge amount of experience with them.

Culture

I grow my terrestrials in a shadehouse with solid roof and shadecloth walls in a fairly open area, i.e. I live on a farm, not suburbia. Yarra Glen is one hour's drive east of Melbourne, south of the Great Dividing Range. My potting mix is ANOS basic mix as described in *Cultivation of Native Orchids of Australia* 2nd edition. I pay great attention to light and air movement as well as being in charge of the water that the plants receive. They are watered with rainwater from my tanks, as no town water is available at my place. I used dam water for several years but was much happier when the shadehouse was connected to a rainwater tank. I have promised the editor a follow-up article detailing more of my cultivation methods and of my observations when I repot this year and see the success or otherwise of my growing efforts when I tip out the pots and view the tubers, both their size and number. If they have all gone badly backwards, there will be no article!!

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Helen Richards is a very knowledgeable and experienced grower of terrestrial orchids and we look forward to hearing more of her insights at the ANOS Conference in August this year.

Where Have All the *Latouria* Dendrobiums Gone?

Text and photos Roslyn Capell
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By that question I mean, what happened to all the seedling plants that were sold in tubes and flasks fifteen to twenty years ago at orchid conferences and fairs? This section of *Dendrobium* is known for being slow to mature to flowering size, but surely by now more of those seedlings should be making their presence felt in shows and award lists, but the numbers and range I was looking forward to have not materialised. Perhaps many are just now reaching maturity and we will see a surge in numbers flowering over the next few years. A lot of the vanguard plants have certainly found their way into the collections of members of Tweed District Orchid Society and other growers in the subtropics of far-north-coast New South Wales and south-east Queensland. The photographs accompanying this article were all taken in this region.

Latouria was originally established as a genus, but was re-classified as a section of *Dendrobium* in 1855. The name honours French botanist Jean-Baptiste Claude Théodore Leschenault de la Tour. He became interested in botany while studying medicine, and was one of three botanists who joined the group of 22 scientists who made up the Baudin scientific expedition, which set out from France on the *Géographe* and *Naturaliste* in late 1800 to explore the Australian coast. By the time the expedition arrived at its destination in January 1802, Leschenault was its chief botanist by default, the other two having left the expedition at Mauritius. An account of the trip can be found on the Western Australian Museum's website. The ships sound like Noah's Ark, with huge numbers of animals collected, and large quantities of plants and seeds. Space was at a premium. At one stage Leschenault was evicted from his cabin to accommodate kangaroos. The expedition explored the coast of Western Australia, across the south of the continent and up to Port Jackson, and to King Island in Bass Strait, and seems to have returned by the same route. Leschenault left the expedition in Timor in 1803 due to illness and spent three years on Java before returning home. He might have encountered *Dendrobium macrophyllum* there, but, as far as I can tell, Java is as close as he ever came to New Guinea.

G. Hermon Slade delivered a paper 'Hybridising potential of New Guinea dendrobiums' at the Sixth World Orchid Conference in Sydney in 1969 and wrote particularly of the potential of species in the section *Latouria*. He noted that most grow cooler than sect. *Spatulata* (still called *Ceratobium* then) and that some can be grown with minimal artificial heat in eastern Australia as far south as Sydney. He noted they quickly grow into specimen plants and have "extremely durable, sizeable flowers of pleasing but not of gaudy colours". He spoke of successes to date and the potential for future crosses. Hybrids had already been made between latourias and "ceratobiums", producing strong, healthy, distinctive plants, often intensifying flower colour. He thought they may well cross with species in sect. *Dendrocoryne*, noting that *D. atroviolaceum* had already been crossed with *D. kingianum* and seedlings had been produced, though none had yet flowered. I wonder if they ever did flower, as I have found no further reference to them.

Though latourias can be slow to reach flowering size, I agree that once there they can indeed reach specimen size quickly, as they can send out a lot of new growths in a year. A plant of mine of *D.* Roy Tokunaga almost doubled in size in the year after I bought it, and it flowered profusely. I then made the mistake of dividing it into too many pieces, and have not managed to grow one of them to the size of the original, so I will leave advice about culture to the experts in the articles referenced below.

Hermon Slade was not the first to identify the merits of sect. *Latouria* for horticulture. Schlechter had recognised their potential, particularly the beautiful white *Dendrobium johnsoniae,* and especially for cut flowers due to their long lasting quality. Thankfully Phil

D. atroviolaceum

D. atroviolaceum

D. macrophyllum

D. forbesii

D. alexandrae

D. convolutum

D. spectabile

D. spectabile

D. polysema

D. finisterrae x *D. eximium*

D. Green Mist (*D. convolutum* x *D. johnsoniae*)

D. kauldorumii x *D. johnsoniae*

Spence took an interest, and his hybridising work with these orchids is well-known. Phil has registered over 120 hybrids with sect. *Latouria*, including intersectional crosses. Roy Tokunaga of H & R Orchids in Hawaii has also bred with them, registering about 40 *Latouria* crosses.

Latouria species and hybrids have the highly desirable quality that their flowers can stay in good condition for three to six months, sometimes even longer. This means that they are available to bring inside to decorate the home many times during their flowering period, and also that it is not as crucial for flowering time to coincide with a show. If the plant is not ready for one show it is likely to still be in good condition at the time of the next one, and possibly the one after that too.

The Australian Orchid Council has given approximately 40 awards of various types to sect. *Latouria* species and hybrids, but that is only about 4% of the total number of awards to dendrobiums. ANOS has given 12 awards out of a total of 253 awards to dendrobiums, which is about the same percentage. All awards were granted in New South Wales or Queensland, or to plants grown in those states. No OSCOV awards have been given in Victoria. The location figures are not surprising when one considers the growing conditions that suit these orchids, many of which require glass-house conditions in temperate regions. One of Phil Spence's objectives was to produce a wider range of hybrids for growers in cooler areas by introducing cooler growing and alpine sect. *Latouria* species into his breeding program, not only with warm-growing *Latouria* species but also with sect. *Phalaenanthe* and sect. *Spatulata* species.

There are many attractive and desirable hybrids composed solely of *Latouria* species, but also crosses between plants in *Latouria* and sections *Phalaenanthe* and *Spatulata,* and with sect. *Dendrocoryne.* The flowers of these intersectional hybrids combine the features of their parents, and usually in a pleasing way. I had the good fortune to have been present when *D.* Aussie's Fantasies 'Yvonne' (*D. engae* x *D. stratiotes*) was awarded a high AM by the New South Wales AOC judging panel in 2004. It was a spectacular exhibit with large, beautiful, fragrant flowers of heavy substance carried on strong, upright inflorescences. It had four racemes with a total of 42 flowers (11 on the main one), and the flowers were 79 x 54 mm. It is pictured on the cover of the March 2004 issue of *The Orchadian.* I have been hoping to see that cross re-made, and that other similar *Latouria/Spatulata* hybrids would be produced, and I still hope that will happen. There are a number of promising directions to be further explored in breeding with sect. *Latouria.* The longevity aspect is a significant one, as is the prospect of increasing cold-tolerance by using the alpine species and so broaden the geographical range within which these plants may be grown without heat.

The hybrids between sects. *Latouria* and *Phalaenanthe* are distinctive in shape. Some of them are exotics as far as ANOS is concerned, since they were made with *Phalaenanthe* hybrids such as *D.* Dal's Glory which contains a small amount of the Philippine species, *D. taurinum.* However *D.* Violet Yamagi (*D.* Midnight x *D. spectabile*) is ANOS-eligible and a very colourful and attractive orchid if you can find one, though it is probably not cool-growing. *Dendrobium bigibbum* has exerted its influence in the colour of that hybrid, and other pinks include *D.* Post Printing (*D.* Impact x *D. convolutum*) and *D.* Foundry Salad Bowl (*D.* Post Printing x *D.* Gerald McCraith).

Phil Spence and others have introduced *D. speciosum* into breeding with sect. *Latouria.* Registered progeny include *D. speciosum* with *D. biloculare* (*D.* Aussie's Limelight), *D. atroviolaceum* (*D.* Aussie's Angelic), *D.* Andree Millar (*D.* Aussie's Pedlar), *D. otaguroanum* (D. Aussie's Bride), *D.* Gerald McCraith (*D.* Aussie's Emerald), *D.* New Guinea (*D.* Specio Guinea), *D. kauldorumii* (*D.* Shawnie) *D.* Post Printing (*D.* Emma's Bubbles), *D. bifalce* (*D.* Golden Spurs) and *D. amphigenyum* (*D.* Aussie's Glamour). Phil has also used the very cool-growing *D. falcorostrum* in his breeding program, including crossing it with *D. atroviolaceum* (*D.* Canberra). These intersectional crosses all

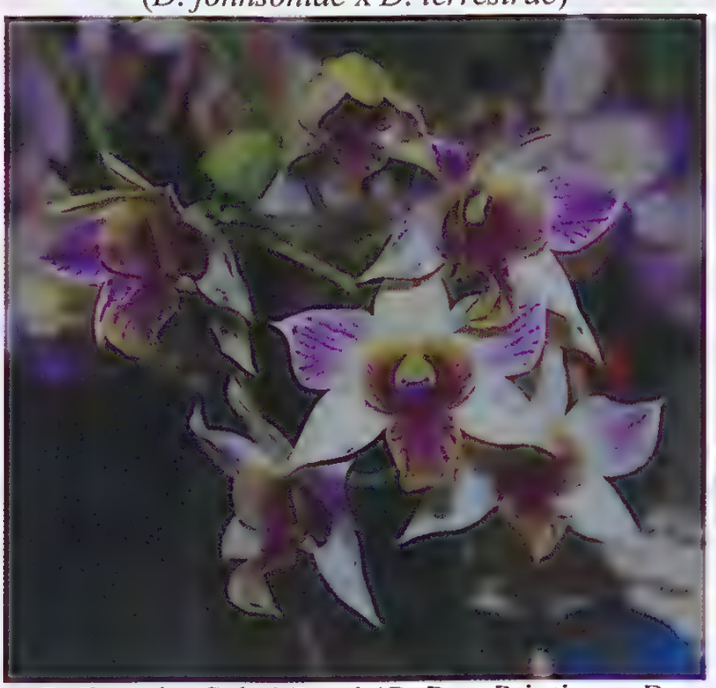
D. macrophyllum x *D. tapiniense*

D. Pacific Pride (*D. alexandrae* x *D. forbesii*)

D. Stephen Batchelor (*D. alexandrae* x *D. johnsoniae*)

D. Jomag 'Rosey-K' HCC/ACC/ANOS 2011 (*D. johnsoniae* x *D. terrestrae*)

D. Adora Nishii (*D. alexandrae* x *D. spectabile*)



D. Foundry Salad Bowl (*D.* Post Printing x *D.* Gerald McCraith)

D. aberrans x (*D.* Theodore Takiguchi x *D. lithocola*)

D. Rosie's Delight (*D.* December Delight x *D. alexandrae*)

D. Aussie's Mystic (*D.* Nellie Slade x *D. atroviolaceum*)

D. Gerald McCraith x *D. spectabile*

D. Post Printing x *D. convolutum*

D. White Grace 'Sato' (*D.* Fiftieth State x *D. speciosum*)

seem to result in progeny which combine the floral features of both parents, and hopefully they will be long-lasting.

Walter T. Upton made some intersectional hybrids using sect. *Latouria* species, including crossing *D.* Aussie Green with *D. speciosum* (*D.* Shirley Hilton), and also crossing it with *D. jonesii* (*D.* Kenny Green). These hybrids combined four *Dendrobium* sections: *Dendrocoryne, Latouria, Phalaenanthe* and *Spatulata. Dendrobium* Aussie Green includes a dash of *D. taurinum* so it is classified as an exotic by ANOS. One very attractive intersectional ANOS-eligible cross mixing sects. *Phalaenanthe*, *Dendrocoryne* and *Latouria* is *D.* White Grace (*D.* Fiftieth State x *D. speciosum*), which was originated by Sato Orchids of Japan. The clone 'Sato' is regularly seen in this region. It is a striking orchid which produces tall, strong racemes of well-displayed pure-white flowers.

Dwarf *Latouria* hybrids are now being seen frequently at meetings and shows. They result from the use of two species: *Den. normanbyense* (previously known as a dwarf form of *D. atroviolaceum* and used in breeding as *D. atroviolaceum* 'Pygmy') and *D. aberrans*. Kew does not recognise *D. normabyense* as a separate species but hybrids are nevertheless registered under that name. *Dendrobium aberrans* has at least 18 first generation registered offspring, including with *D. johnsoniae* (*D.* Mini Snowflake), *D. atroviolaceum* (*D.* Aussie's Chip) and with *D. normanbyense* (*D.* Micro Chip). Yes, there are different names for the progeny of *D. atroviolaceum* and *D. normanbyense* with *D. aberrans*, but such anomalies follow when taxonomic changes are made. In addition to *D.* Micro Chip, there are six other registered first generation hybrids using *D. normanbyense*, including *D.* Little Atro (x *D. atroviolaceum*) and *D.* Little Nora (x *D. rhodostictum*).

There is a very attractive compact hybrid labelled as *D. aberrans* x (*D.* Theodore Takiguchi x *D. lithocola*). Since *D. lithocola* is regarded by Kew and the World Checklist of Selected Plant Families as synonymous with *D. bigibbum*, the name of the pollen parent could be written as *D.* Doreen, however in this case the fact it was the compact form of the species that was used is valuable information. These dwarf plants are an excellent choice for growers with limited space. They flower on growths not much taller than their plant tag and have relatively large flowers, and when they start to reach specimen plant size they should make eye-catching exhibits.

ANOS Kabi Group has several members who grow sect. *Latouria* species and hybrids, and the Group's annual show in August often features fine examples. The Grand Champion of the ANOS Conference in Brisbane in 2013 was a *Latouria* hybrid. Hopefully we will see a good number of them benched at the ANOS conference in Brisbane in August this year. I also recommend looking out for them at the many other spring and autumn shows in this part of the world.

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Dendrobium teretifolium in the Wild

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Dendrobium teretifolium in the broad sense has to be seen in the wild to be well understood.

For the purposes of this discussion, I'm going to deal with *D. teretifolium* that grows between Narooma in southern New South Wales and north to the Eungella region just west of Mackay in central Queensland. That spreads over 2000 kms or so. It is a topic that has been well covered in general by many authors, but the details of regional variants have rarely been recorded. I have some observations that may be of interest to many growers.

The form referred to by Dockrill as *D. teretifolium* var. *teretifolium* is thought of by most of us as the one that grows most frequently on *Casuarina* tree species colonising coastal creeks and inlets. The environment is usually close to salt and brackish water at low altitudes. This form is the one that can totally bury itself in thousands of white blooms in the early part of spring. Stunning displays swoonpeople when large specimens are benched. The distribution of var. *teretifolium* extends, in my observations I stress, from Wodonga Inlet (Narooma) northwards to Kroombit Tops near Gladstone in Queensland. Over that large range however, there are huge variations in the vegetative habit of var. *teretifolium*. So much so that it is difficult to recognise it as all one variety.

Between Narooma and the Illawarra region, just south of Sydney, *D. teretifolium* var. *teretifolium* is mostly seen growing in tightly crowded clumps that do not hang down all that far. Rather it seems to grow upwards instead of pendulously. It grows out from the host instead of just hanging downwards in curtains. I have seen mature clumps that have vast root systems but the depth of the plant mass may only be 70 cm or so top to bottom. However, the horizontal width of the clump can be 40 cm from the tree trunk to the outer leaves before weight forces the plant to hang downwards. The result is that mature clumps take on a rounded appearance. The so-called Penrith form, which grows on remnant casuarinas which line creek banks and swampy ground in western Sydney suburbs, is very typical of this form. Much of this habitat has been developed but some is protected behind Defence Department fencing on Sydney's outskirts.

North of the Hawkesbury River, var. *teretifolium* becomes a pendulous species. They often hang out over the salty marshes in long 'bridal veils' up to 2 m long. They are quite content to hang limply down and they still produce huge numbers of blooms in early spring. Why there is a difference in growth habit between the south coast and the central coast ones is anyone's guess. The difference is real. So far as I'm aware these pendulous coastal forms continue right up to at least the Noosa Region of the Sunshine Coast.

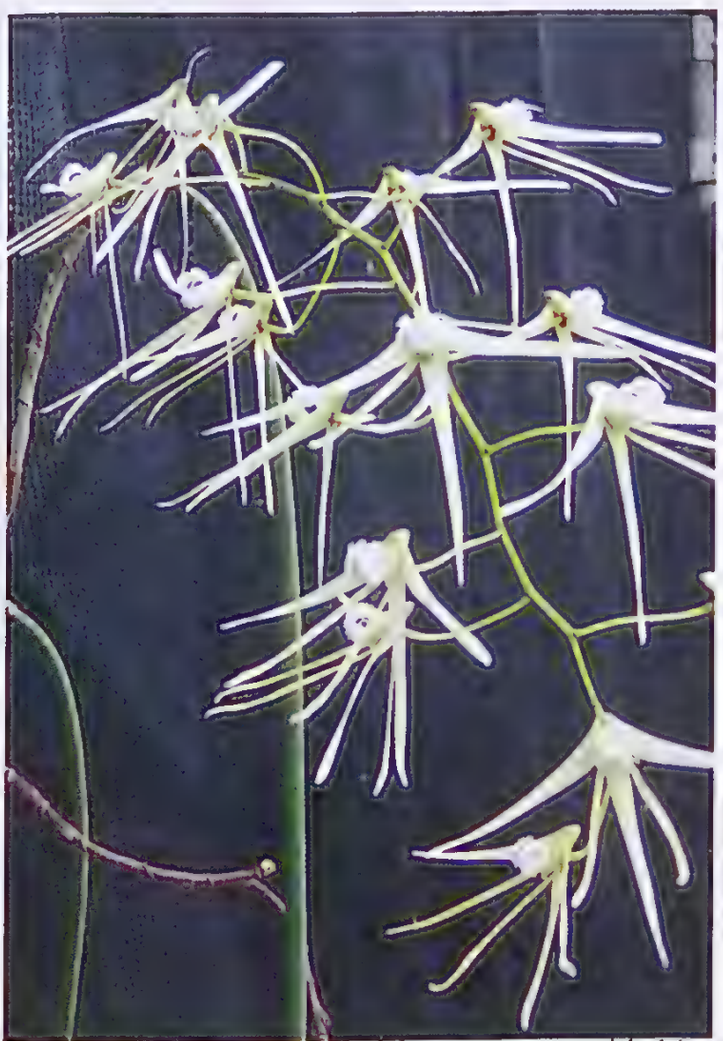
Dendrobium teretifolium var. *teretifolium* has a different habitat from around the Macleay River, Kempsey district, preferring the higher, mountainous terrain of the Great Dividing Range. While it is not commonly seen in this rainforest habitat in the New South Wales part of its range, it certainly becomes much more common as you move across the border into Queensland. In the mountains it is seen growing in dry rainforest and fairly heavy shade. I've seen it growing with *D. gracilicaule*, *D. speciosum* var. *hillii*, *Sarcochilus falcatus*, *Rhinerrhiza divitiflora*, along with staghorns and birds nest ferns. This is often a considerable distance from the normal coastal habitat. In dryer sclerophyll forests a long way inland, and at lower altitude, I've seen it growing with *D. bowmanii*, *D. monophyllum*, *S. parviflorus*, *S. weinthalii* and others. This dryer, inland habitat contrasts with the *Casuarina* habitat of the coastal inlets and creeks. However flowers of all these forms seem similar in all the habitats.

A point to consider is why var. *teretifolium* does not inhabit the vast Barrington Tops rainforests, but is very common on the coast at the same latitude. It is only found in the rainforests once the Macleay River is

Kroombit habitat with *D. teretifolium* growing as a lithophyte.

D. teretifolium var. *aureum*, Kroombit.

D. teretifolium var. *aureum*, Kroombit.



D. teretifolium var. *teretifolium*, raceme with 16 flowers.

reached. This habitat continues on to at least the Jimna Range west of Noosa. West of the Jimna Range are the Bunya Mountains, which strangely enough, do not appear to support var. *teretifolium*. The form in the Bunyas is only var. *aureum*; more on that form later.

This rainforest form of var. *teretifolium* should not be confused with var. *fairfaxii* or var. *aureum*. These two are vastly different from var. *teretifolium*, which produces racemes with up to ten or more flowers. Racemes can be up to 15 cm long. *Dendrobium teretifolium* var. *fairfaxii* and var. *aureum* only produce flowers by two, rarely more at any point.

Heading northwards once again, *Dendrobium teretifolium* var. *teretifolium* takes on a new persona. Around the Kroombit and Kalpower regions it establishes extensively on rock substrate rather than trees. In parts of Kroombit, many hundreds of specimens are growing in huge mats on rocky outcrops in much drier hardwood forest. It is very obvious that in this region it much prefers the rocky outcrops, as it is rarely seen on the vast supply of suitable trees about the rocky hillsides or in the rainforest gullies. When it blooms however, there are no discernible differences in the floral characteristics to the plants from New South Wales on the coast. The habitat is the most notable difference, and secondly, the ever changing vegetative habit from south to north. Kroombit seems to be a very obvious cut off point for var. *teretifolium*. I have not seen it north of there, despite there being some very suitable country, until the Eungella region is reached. Other orchid species are present in this zone but *D. teretifolium* is not. At Eungella var. *aureum* is common and the only variety found.

Dendrobium teretifolium var. *fairfaxii*

This is the other well known form of the *D. teretifolium* complex from New South Wales. It does not have a long raceme and only produces blooms singularly or in pairs. Very occasionally up to four blooms can occur. The flowers can be up to 90 mm broad and are white with heavy maroon striations at the base of the segments. There is no similarity between var. *teretifolium* and var. *fairfaxii* when flowering side by side. Vegetatively, var. *fairfaxii* is not nearly as robust and even young plants tend to be much more pendulous. It inhabits trees and occasionally rocks in damp bush and rainforest.

The variety *fairfaxii* extends from the Blue Mts near Sydney, northward to the Clarence River, south of the New South Wales and Queensland border. It does not occur at all in Queensland and any plants pertaining to a Queensland origin must be considered highly suspect. Most surprisingly I have not seen var. *fairfaxii* growing side by side with the rainforest forms of var. *teretifolium*. The zone around the Macleay River valley seems to be suitable for both to share but I've only noticed one form or the other in identical habitat.

D. teretifolium var. *aureum*

Some people consider this to be just a colour form of *Dendrobium teretifolium* var. *fairfaxii*. I cannot agree with this and most would agree. While plants look the same, in growth and habitat, the flowers are different, not only in colour but in size and general appearance. They do not cross over in distribution either, with the distribution of each distinct with no intermingling.

In the south of its distribution, var. *aureum* inhabits the Border Ranges, north of the Clarence River, and continues northwards to Bunya Mts around 100 kms north of the Queensland and New South Wales border. Where it occurs in this zone, it is the only form of *D. teretifolium* present. Little pockets of the rainforest form of var. *teretifolium* occur on the drier ranges near Toowoomba. *Dendrobium teretifolium* var. *aureum* does not mix with it and prefers the damper zones and rainforest. The range of var. *aureum* in its distribution is not very extensive when the range of var. *teretifolium* is compared but it can be quite common within its range.

North of the Bunya Mountains there appears to be a large zone where there are no plants of var. *aureum* at all. It makes a reappearance in the Kroombit area 300 kms to the north but

it is in no way common. It is restricted here to pockets of *Araucaria* hoop pines in deep gullies. Plants here occasionally grow very large and a blooming specimen will not be forgotten readily.

As mentioned before, out of these damper gullies, var. *teretifolium* with its white blooms, is very common. There is no mistaking the two forms when they are blooming. One is white and the other is quite a golden yellow, and the plants of var. *aureum* are far more flaccid and pendulous, just not near as common. I have been to Kroombit many times and this distinctiveness of form is quite obvious.
North of Kroombit, there is a long zone with no mountain forms of *D. teretifolium* present at all. Once the Eungella region is reached, some 400 kms further north, *D. teretifolium* var. *aureum* makes a dramatic reappearance. It is extraordinarily common in the towering rainforests of Eungella. Some huge plants up to 3 m long can be observed and seedling plants at times are dense. The Eungella form is completely the var. *aureum* form. Lots of plants seen over many visits have never revealed white blooms.

North of Eungella there is a dry zone that separates the south from the Wet Tropics. I have not heard of any *D. teretifolium* coming out of this zone. It is largely an unexplored area, orchid wise at least. So, who knows what may be there? From Townsville north there are a lot of other forms of the *D. teretifolium* complex making an appearance.

Conclusion

Dendrobium teretifolium grows across 3000 km of range and takes on very different habitat forms. I record some interesting variations in *D. teretifolium* var. *teretifolium* from Narooma to central Queensland. Variety *fairfaxii* grows in northern New South Wales from the Blue Mountains to the Clarence River. More observations may reveal some surprises down the track. *Dendrobium teretifolium* var. *aureum* inhabits three quite distinct regions, with hundreds of km separating them. I don't know if the task of examining and comparing these forms has ever been undertaken. I am fortunate that I have a few specimens from each region and hope that in the future all of them will bloom in one big event so comparisons can be made.

Gerry Walsh is an experienced ANOS judge and grower.

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CONFERENCE PROGRAMME

Friday August 23rd
9.30 am Session 1: Warm growing Australian/Australasian epiphytes
1 pm Session 2: Cool growing *Dendrobium* species and hybrids

Saturday August 24th
9.30 am Session 3: Australian *Sarcochilus* and allied genera – culture and breeding
1 pm Session 4: Australian terrestrial orchids – conservation and culture

Sunday August 25th
9.30 am Session 5: ANOS Judging. An update for growers and judges.

Confirmed Conference Speakers and Topics:

Seasonal Australian terrestrial orchids. Helen Richards (Vic.)
Helen has wide experience in conservation and cultivation of terrestrial orchids, and is a Director of the Australian Orchid Foundation.

Dendrobiums – growing the warm sections in sub-tropical and temperate zones. Robert Reitano (Qld).
A focus on the particular cultural requirements and breeding of the sections *Spatulata*, *Phalaenanthe* and *Latouria*. Robert is an ANOS and AOC judge who writes and lectures on Australian and Australasian orchids.

Australian native orchid hybridising – Where we have come from? David Cannon (Vic.).
A retrospective look at the early history of Australian native orchid hybridising.
David is the patron of ANOS Inc. He has been actively involved in *Dendrobium* hybridisation for many decades.

Aeridinae (*Sarcanthinae*) hybrids. Roslyn Capell (NSW)
Roslyn is an ANOS and AOC judge, a well known writer, speaker and trainer on Australian orchids.

Australian dendrobiums – culture and breeding strategies. Callyn Farrell (NSW).
Callyn is the co-owner of DUNO and Elermore Orchids, an ANOS judge, and regularly lectures in Australia and New Zealand.

Conservation project for endangered terrestrial orchids. Neil Anderton (Vic).
Neil is active in terrestrial orchid conservation at the Royal Botanic Gardens, Melbourne and is past president of Geelong ANOS.

Dendrobium Warringah

Text and photos Henry Wilson
henry.wilson1@bigpond.com

I guess we all have favourite plants that help us maintain our interest in and love of Australasian native orchids and their hybrids. After trying to grow these fascinating plants, one that has become a favourite of mine is *Dendrobium* Warringah.

Dendrobium Warringah is a hybrid cross between *Dendrobium bigibbum* and *Dendrobium speciosum*. It was made by the late well known hybridiser Wal Upton in 1979 and registered by him in 1984. Wal used *Dendrobium bigibbum* var. *compactum* as the pod parent, but I have not been able to confirm what variety of *Dendrobium speciosum* was used as the pollen parent. Perhaps some astute grower may still have some of Wal's *Double U Orchids* catalogues and be able to clarify. I suspect it may have been either variety *speciosum* or *curvicaule* but it would be good for the record and provenance of this plant to be confirmed.

My First *Dendrobium* Warringah Plants

In 1992 I made a cross of *D.* Warringah using *Dendrobium bigibbum* var. *compactum* with pollen from two *D. speciosum* var. *speciosum*. One was the well-known 'Windermere' and the other was collected from the southern side of the Colo River at Colo, which I called 'Bull's Ridge'. The *D. bigibbum* var. *compactum* was a Ken Russell sibling cross (KWR617 Jellat x 136).Viable seed from both crosses was plentiful and quite a number of flasks were obtained. The seedlings from both crosses were slow growing, particularly, I think, because of the weather we have in the Hunter Valley and the *D. bigibbum* influence in the cross. Weather in the Hunter Valley where I live can range from – 5°C in winter to 50°C in summer. This current summer has been exceptional, with very little rain and many continuous days of more than 40°C. This is not ideal for any flora and some of my native dendrobiums and their hybrids have suffered.

First flowerings were a delight, everything from pure white and stripes through to light and dark pinks resulted. Second year flowerings were even better, with improved presentation and increased flower numbers on racemes. Racemes varied - some were upright while others arched with flower count on some exceeding 30 flowers.

My current growing medium is treated bark of 12 – 15 mm diameter. In spite of less than ideal growing conditions in the Hunter Valley, these plants grow well for me and appear to be resistant to orchid pests and diseases. They are regularly fertilised during the new growth period and another fertiliser is used when racemes start to develop in late winter. The plants receive no other special attention and grow happily in my bush house which has a solid clear fibre glass roof covered with 50% shade cloth. Initially I added another layer of 50% shade cloth over the roof and western side of my growing area in summer, but found it resulted in less than optimum light. I have full length fibre glass sides with louvre windows which enables attention to air flow. A NW aspect to my bush house adds to challenges of growing and obviously has some impact on the flower count and plant growth. Watering is done by hand and affords opportunity to observe plants and is also a great relaxation exercise. The only heating I have in the bush house, with very limited benefit, is our home's hot water system in an area that is primarily used for the *D. bigibbum* plants I grow. Minimum use of both insecticides and fungicides is practised.

Remakes

Since making the first lot of *D.* Warringah in 1992 I have attempted remakes in every year without similar success to 1992. Regardless of using both different pod and pollen parents, little viable seed has been obtained. Pods that did form were left for 7+ months before harvesting and then scraped when thoroughly dry to collect any potential seed. Pod ripening

Dendrobium Warringah 'Pink'

Dendrobium Warringah 'Stripes'

Dendrobium Warringah 'Blush'

Dendrobium Warringah 'Snowdrop'

Dendrobium Warringah 'Alpha'

Dendrobium Darlington

is an issue, especially if you prefer to flask with dry seed as opposed to green pod flasking.

Minimal seed was obtained from pods in 1999, 2007 and 2015, with very limited germination and a few seedlings resulting. The seven to eight year periods between the small amounts of viable seed is strange and one wonders if there is a cycle where viable seed is more likely than at other times.

The very limited number of new seedlings I have achieved in recent times have had both D. bigibbum var. *superbum* and var. *compactum* as pod parents.

Hybrids Using *Dendrobium* Warringah

There have not been a lot of hybrids made using *D.* Warringah as one parent. To date (Feb. 2019) only five new hybrids have been registered. These are listed in Table 1. It is interesting to note that the pod parent in each registered hybrid is *D.* Warringah. I also have had little success with *D.* Warringah as a pollen parent. Several seedlings of *D.* Warringah are tried by me each year in hybridising, including 'Snow Drop' and 'White Light'. *Dendrobium* Warringah 'Alpha' and 'Purple Heaven' FCC/AOC are the only two to date that have provided viable seed. 'Alpha' has *D. speciosum* var. *speciosum* 'Bull's Ridge' as the pollen parent which I no longer have. Seedlings of the cross with 'Purple Heaven' FCC/AOC are yet to flower and it will be interesting to see what colours come through. The *D. speciosum* used in this later cross with 'Purple Heaven' was an intervarietal, 'Ted' x 'Windermere'.

Dendrobium Darlington is a cross I made and registered in 2012. It resulted in quite a nice flower and has been used for further hybridising, crossing it back to *D. speciosum* var. *speciosum* 'Windermere' and 'Lorraine'. A photo of *D.* Warringah 'Alpha' which was used as the pod parent is shown together with the resulting *D.* Darlington. This cross was remade last year.

I am aware that *D.* Warringah x *D. speciosum* was made and flowered some years ago and there could well be other crosses using *D.* Warringah which likewise have not been registered yet. There is still potential for further hybridising using selected *D.* Warringah, particularly in view of today's improvements in colour, shape and presentation being achieved with native *Dendrobium* hybrids. The pure whites such as 'Snow Drop' offer great potential.

Dendrobium Warringah is a great primary hybrid that is easy to grow once established and requires a minimum of maintenance. I am developing a computer data base on the provenance and history of *D.* Warringah and would be pleased to hear from any grower who could add to the background of this hybrid and any of its variously named plants.

Henry is a grower and hybridiser from New South Wales and member of ANOS Newcastle. His focus is Australian dendrobiums and their hybrids, particularly D. bigibbum and its hybrids.

Table 1. Hybrids registered with *Dendrobium* Warringah as a parent.

Hybrid Name	Parentage	Registration
D. Colonial Sun Maid	*D.* Warringah x *D.* Sunglow	2002 P. Spence
D. Double Joy	*D.* Warringah x *D. kingianum*	2010 L. Edwards – W.T. Upton
D. Syd's Delight	*D.* Warringah x *D. falcorostrum*	2010 Castle Creek - O/U
D. Darlington	*D.* Warringah x *D.* Aussie Ira	2012 H. Wilson
D. Lloyd Perryman	*D.* Warringah x *D.* Avril's Gold	2014 Botanic Ridge Orchids

Growing *Dendrobium* section *Rhizobium*

Text and photos Callyn Farrell
callynfarrell@gmail.com

When reading articles on culture, it is important to recognise that individual orchid houses have their own microclimate, so each grower must adapt to their own unique conditions. Our nursery is in Newcastle, New South Wales, in a suburban area that is quite shaded and has a wide range of temperatures through the year. Temperature typically varies from 7–27° *C* and is rarely below 4.5° *C* or above 33° *C*.

Pots

We prefer to use various sizes of squat pots manufactured by the Orchid Pot Co. These quality pots come in an extensive range of sizes and are made of durable plastic. The free draining design is the reason they have been so successful.

Growing Media

A medium starting with a quality treated Kiwi Pine Bark, Size 2 is recommended for 50–80 mm pots and Size 3 for larger pots. Pine bark makes up around 70% of the media, the remaining 30% is 10 mm scoria rock. A mixture of chopped *Sphagnum* moss and perlite may also be useful in growing cuttings with minimal or no root growth.

Fertiliser

Avoid high nitrogen fertiliser as it leads to soft, fungal-prone growth and few flowers. We use a high potassium fertiliser with a N:P:K ratio of 8:5:25, at a rate of one gram per litre of water fortnightly, all year round. We compliment this by using *Amino Grow* as a drench or foliar feed. This helps the uptake of potassium (K) whilst also maintaining a high level of sugars. To maintain optimum results, we use micro-fine lime at the rate of one gram per litre in early autumn and again at the beginning of spring.

Insecticide

The well known organic 'horticultural oil' recipe is recommended. It consists of 2 cups of vegetable oil and ½ cup of dishwashing detergent. Shake together in a jar, where the mixture will turn a milky colour. Add 2 tablespoons of this concentrate to a litre of water and it's ready to spray. This controls most insect pests, including scale, aphids, white fly, leaf miner, mealy bug and mites.

Fungicides

The following four organic recipes are listed in order of increasing strength.

Bicarbonate spray

Two teaspoonfuls bicarbonate of soda, half a teaspoonful of sunflower oil and a drop of biodegradable dishwashing liquid to one litre of water.

Powdered sulphur, dusting grade

Simply dust over plants, but not when temperatures exceed 30°C.

Lime sulphur spray

One tablespoon of lime sulphur to one litre of water.

Bordeaux spray

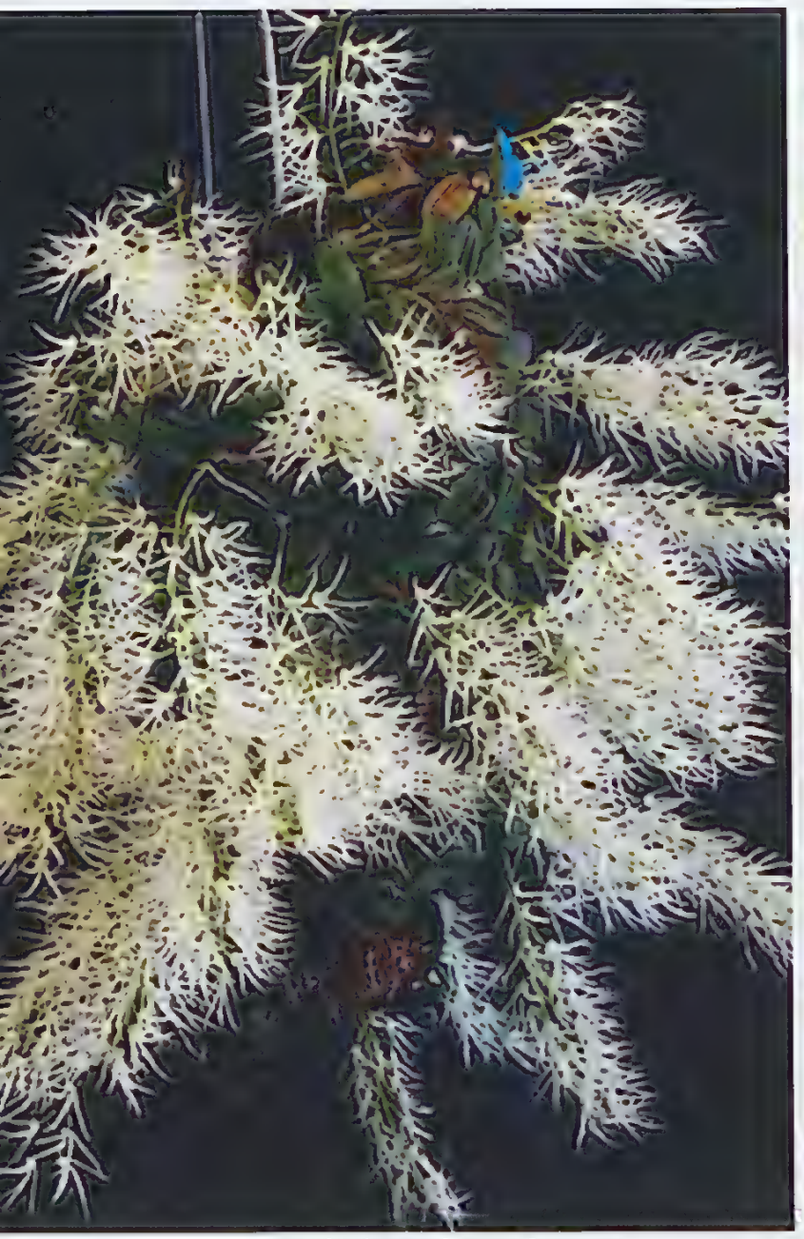
Add 100 grams of builders', brickies' or hydrated lime in half a standard plastic bucket of water, stir well. Add 100 gm of copper sulphate to a separate plastic half-bucket of water and stir until dissolved. Then pour the lime water into the copper sulphate water and mix thoroughly.

House Coverings, Watering, Air movement and Humidity

Our main tunnel house is covered in 30% black shade cloth. This allows maximum light which most species and hybrids of this section require to produce masses of flowers. However, some species such as *D. pugioniforme* may prefer less light. Species such as *D. chordiforme* and *D. erythraeum* may grow better with a covered roof over the winter months. In

Flask of seedlings

Deflasked seedlings



Dendrobium linguiforme

Dendrobium striolatum

Dendrobium Hot Coals 'Ang' Photo Peter Adams

Dendrobium Tweetas 'Mustard' Photo Peter Adams

Mesh pots and mounts

our conditions these plants prefer to remain consistently moist all year around. No dry spell is required for most species and hybrids, apart from *D. teretifolium* var. *fasciculatum,* which will benefit from reduced watering in the winter. Constant and consistent air movement is crucial to growing this section. We have found that hanging the plants helps in achieving optimal air movement. With regard to humidity, while not necessary, I believe it is best to keep the plants consistently moist throughout the warmer months.

Mount culture

We are not strong advocates of mount culture, and most of our collection of around 1000 mature plants have been growing in pots for some years. However, some species require mounts to flourish. These are the *D. teretifolium* complex, *D. cucumerinum*, *D. linguiforme*, *D. pugioniforme*, *D. racemosum* and *D. rigidum*, which have all grown well on cork mounts or aged hardwood.

De-flasking

Add a little water to the flask if the agar is slightly hardened, swish around and your new seedlings should slide out. Rinse the seedlings in water and be sure to remove all agar mixture from the roots. Then place them in a solution of *Envy* and soak for 5 minutes. Lay them on damp newspaper overnight, then pot new seedlings up the next morning. Do not let the new seedlings dry out. Keep them protected from extreme weather, and if any signs of fungus growth appear use a fungicide at a low rate. Avoid large community pots as a fungal infection may wipe out the entire pot.

Propagation and Pruning

Plants can be propagated quite easily. It is best to take a cutting when a new aerial root forms outside of the pot. Cut above the new root when it is 5 cm long and pot into a 50 mm tube. If a cutting has no roots a rooting hormone may be useful. The pruning method is used to initiate new growths at the base of the plant. Older plants, especially those of the *D. teretifolium* complex, or *D. schoeninum* especially, may need pruning. These plants sometimes become full of 'dead wood' when growths are lengthy and don't flower. We suggest pruning after flowering and before new growth is initiated. Be careful not to prune too hard. We usually take 2–5 growths from a mature plant.

Callyn Farrell is an ANOS judge and the co-owner of Elermore Orchids and DUNO in New South Wales.

Hanging pots

Well drained pots

Recollections of *Dendrobium speciosum* 'Charlie' AM/AOC 1989

Text and photos David Butler
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I joined Cumberland Orchid Circle at the start of the 1980s, at which time three of the older members grew a top-class *Dendrobium speciosum* called 'Charlie'. This *D. speciosum* looked like the ones from the Hawkesbury sandstone region and was accepted as being the local form *D. speciosum* var *speciosum*.

The story was that Charlie Smith, a respected senior member of Cumberland Orchid Club, had over the years exhibited a stunning *D speciosum* which usually blew the opposition away. It was described to me that Charlie Smith flowered *D. speciosum* 'Charlie' to perfection in a cold glasshouse with the racemes facing the glass on the sunny side. When he was no longer able to grow his orchids he gave this good *D. speciosum* to three friends - Reg Green, Tom Turner, and Don Jones. The proviso was that they would keep the plants to themselves while Charlie was alive, a promise they honoured. It is a matter for conjecture whether the three plants handed down were really divisions of the one plant.

After Charlie Smith passed away Bernie Fletcher and I were fortunate to obtain pieces of the various plants. What was immediately of interest was that the tags showed *D. speciosum* 'Charlie' but Tom's added (C1) and Don's had (B2). Reg had received an AM for his so we just called it 'Charlie' AM. The plants looked a bit different from each other so care was taken not to mix them up when pieces were further exchanged. In 1987 Don Jones was selling his orchid collection and I obtained a plant of several bulbs with rot in the middle. When the rot was cut out and treated I ended up with several separate growths each of which flourished when potted up individually. For want of a better name I called it 'Charlie 87'.

My recollection is that the growths of 'Charlie C1' plants taper so that they are quite narrow at the top, and flowering is from the apex between the top leaves with no (or few) other eyes evident. I think that 'Charlie' AM may be similar in this regard. The other two, 'Charlie B2' and 'Charlie 87', each have canes which are much wider at the top with numerous flowering eyes. As they both came from Don Jones, albeit many years apart, they may be the same.

All these plants have flower racemes that are almost invariably 680 mm (2ft 3in) long and the buds become quite large soon after they leave the sheath. The petals tend to come forward, but when the grower gets the flowers to open up and stay that way it is an imposing orchid. Perhaps this is where Charlie's glasshouse served its purpose.

In breeding it proved difficult for me as either the pod or pollen parent but I have heard of it giving a few seedlings in a cross with another *D. speciosum*. With so many wonderful speciosums around these days it is hard to understand just how admired and sought after one individual plant could have been, but I still remember how wonderful it was to receive our own special pieces of 'Charlie'.

David is an experienced breeder and grower of Australian orchids.

Display at ANOS Conference, Wollongong

Dendrobium speciosum 'Charlie' AM/AOC 1989

ANOS Geelong Tuber Day

Text and photos Neil Anderton
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Almost from its inception ANOS Geelong has had a number of members interested in terrestrial orchids, both in the field and in cultivation. Initially tubers were distributed less formally, but in the 13 years I have been a member, ANOS Geelong has held a 'Tuber Day' in early February each year. ANOS Victoria donates most of the tubers left from their tuber bank, with Helen Richards and Richard Thomson donating many tubers. ANOS Geelong members also donate tubers. Eric and Frances Wilde had hosted the Tuber Day at their property up until 2015, until they sold their property at Little River. I have a three acre property at Teesdale, with a large10x10 m shed, ideal for hosting the Tuber Day, and that has been the venue for the past four years. One benefit for me is it means the shed has to be cleaned out and reorganised at least once a year!

The format for the day is a barbeque, lots of catching up after the summer break, a talk on an aspect of growing terrestrials by Richard Thomson, then distribution of tubers. Members interested in purchasing tubers take part in a draw, each member selecting one lot of tubers per draw. This process is repeated until all lots of tubers are sold or there are no more buyers. This allows everyone to have a chance at getting the most sought-after tubers. ANOS Geelong has, for the last three years, provided potting mix and a pot in the price. Number of tubers per serve usually ranges from three to seven, but occasionally we may only receive two tubers or, if we have many tubers, the lot size may be up to ten tubers.

ANOS Geelong, Geelong Orchid and Indoor, Colac and Cobram Orchid Clubs hold an inter-club get-together each year. This year it was ANOS Geelong's turn to hold the get-together, so the committee decided to combine the get-together with the tuber day, with the other club members able to participate in the purchase of tubers.

The potting mix provided is the same mix that I use: BioGro terrestrial orchid mix (purchased by the cubic metre), perlite, leaf mulch plus blood and bone. Quantity prepared is around 700 litres and requires a lot of shovelling! Packing the tubers into envelopes took four of us a full day. Tubers that were shooting were potted up so that the shoots would not be damaged.

This year the weather was almost perfect, in the low twenties and with light-moderate winds. There were 30 guests, with 28 purchasing tubers. There were plenty of tubers to choose - 88 species or forms, over 1,800 tubers in 430 lots – 350 in packets and 80 in pots.

Everyone enjoyed the barbeque and wide variety of salads, dessert, slices and cakes.

Mixing potting mix.

After the meal Richard Thomson spoke about the different types of terrestrials, ranging from the evergreen *Cryptostylis* (using *C. erecta* and *C. subulata* that were conveniently flowering in my shadehouse as props) through to the commonly available deciduous terrestrials, discussing the requirements of different genera and species. He also covered where to get suitable potting mixes and suitable additives such as perlite or gravel to make the mix more open, or leaf mulch to improve water retention and provide nutrients for the orchid mycorrhizal fungi. How to care for terrestrials throughout their growing cycle was also covered. The handout that Richard had supplied disappeared rapidly.

Once the draw for the orchids began, the more sought after species disappeared quickly – *Caladenia latifolia* and *Diuris* species went especially fast. After five or six rounds, most had enough tubers though some kept going for some time. Around 200 lots of tubers were sold. The supply of potting mix diminished quickly – around 400 litres of mix was used.

The day was highly successful, with all of us enjoying catching up with orchid enthusiasts from other clubs enjoying the great meal and purchasing orchid tubers that are hard to source elsewhere. More tubers were sold at the ANOS Geelong February meeting a few days later, with the leftover tubers being potted up as raffle prizes or to supply tubers next year, and the remainder sent to NOSSA to be grown on for their tuber bank next year.

An event like this depends on the efforts of many people, and I'd like to acknowledge the efforts of the committee and members who made the day such a success.

Neil is involved in terrestrial conservation at the Royal Botanic Gardens, Melbourne, and is a speaker at the ANOS Show and Conference in Strathpine, Brisbane in August this year.

Richard Thomson discussing terrestrial cultivation with David Bell.

Tubers laid out and ready for sale.

#322 *Dendrobium schoeninum* 'English' HCC/ANOS 2018 (NSW)

Points	77.0
Owner	Ross Morrison
Date & event	22 September 2018 -
Photos by	Greg Steenbeeke
#flowers/inflorescences	27 & 3 buds / 25
Measurements(mm):	
flower	40 across 26 vertical
petal	16L 2W
sepal	17L 3.5W
dorsal	19L 3.5W
labellum	20.6L 6.2W
inflorescence length	10
Detailed avge points:	
shape(25)	19.8
colour(20)	16.0
size(15)	10.9
substance/texture(10)	8.1
floriferousness(15)	11.3
habit/attractive(15)	10.9

#323 *Dendrobium* Australian Flindersmoon 'Suzanne' HCC/ANOS 2018 (VIC)

Points	77.7
Owner	Daryl Mills
Date & event	16 September 2018 -
Photos by	Peter Adams
#flowers/inflorescences	452 & 5 buds / 21
Measurements(mm):	
flower	34 across 47vertical
petal	20L 5.5W
sepal	26L 11W
dorsal	28L 8W
labellum	18L 8W
inflorescence length	310
Detailed avge points:	
shape(25)	19.0
colour(20)	15.8
size(15)	12.0
substance/texture(10)	7.7
floriferousness(15)	12.0
habit/attractive(15)	11.2

#324/5 *Dendrobium* Australian Ginger 'Golly' FCC-ACC/ANOS 2018 (VIC)

Points	85.3, ACC 85.4
Owner	Wayne Turville
Date & event	13 September 2018 special judging
Photos by	Peter Adams
#flowers/inflorescences	261 & 10 buds / 170
Measurements(mm):	
flower	42 across 26 vertical
petal	18L 5W
sepal	25L 9W
dorsal	22L 5W
labellum	21L 9W
inflorescence length	70
Detailed avge points:	
shape(25)	21.5
colour(20)	17.1
size(15)	12.3
substance/texture(10)	8.0
floriferousness(15)	13.2
habit/attractive(15)	13.2

18th DENDROBIUM SPECIOSUM SPECTACULAR & AUSTRALASIAN ORCHID SPECIES and HYBRID SHOW 2019

Kempsey, NSW

(Ted & Winsome Walmsley and ANOS Mid North Coast Group)

Dates for this event which provides a first class opportunity to see some of the best speciosums in flower as well as a wide range of other Australasian orchids and hybrids, are given below. Note the dates and plan to be there. All are welcome to exhibit and judging will be by an all ANOS panel. Monetary prizes and trophies will be awarded in a range of classes including species, hybrids and terrestrials.

Interstate entries are encouraged with a prize for the most travelled orchid.

Dates: **Sat 31st Aug 10am to 4pm [Closed for judging b/w 11am and 12 noon this day]**
Sun 1st Sept 9am to 2pm

Location: **Kempsey Dirt Bike Track, Alverton St., Greenhill, via Kempsey.**

Details: **Refer to the website: www.kempseyspeciosumspectacular.com.au OR contact Ted Walmsley on (02) 6562-7150 or John Zietsch on (02) 6554-9733.**

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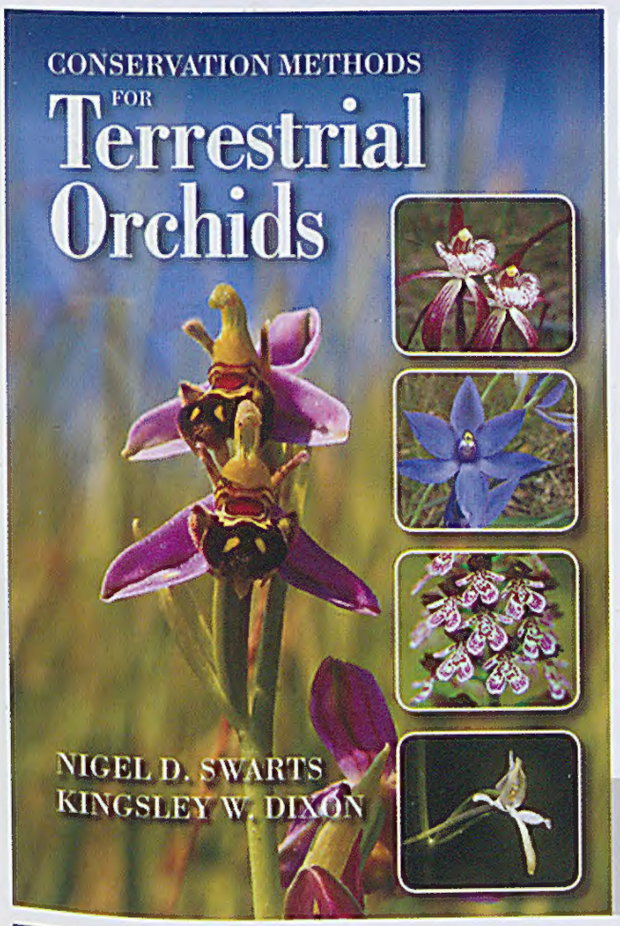

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Directory of ANOS Groups (and Associated Societies)

NEW SOUTH WALES

- **ANOS Central Coast**; PO Box 3010, Erina NSW 2250 - Neville Lee (02)4340 5157 2nd Wednesday each month, 8pm. Narara Community Centre, 2 Pandala Rd, Narara 2250
- **ANOS Far North Coast Inc.**: 2 Treelands Cres, Ballina, NSW 2478 - Keith Skaines (02)6686 6303 3rd Saturday of month (except Dec. & Jan.), 2pm various venues, contact the secretary.
- **ANOS Illawarra**: 2 Wilford St, Corrimal NSW 2518 - Bruce Porter (02)4284 8308 2nd Tuesday each month, 7pm. Old Court House, Wollongong.
- **ANOS Macarthur and District**: 7 Pickett Ave, Minto NSW 2566 NSW - Wally Southwell (02) 4681 8589 3rd Thursday each month, 8pm. Birriwa Community Hall, Fitzpatrick Rd, Mt Annan.
- **ANOS Mid-North Coast**: 69 The Lakes Way, Forster NSW 2428 - John Zietsch (02)6554 9733 3rd Sunday each month, 12 noon, followed by BBQ. Contact for location - Taree or Wauchope
- **ANOS Newcastle Inc.**: PO Box 5079 Raymond Terrace NSW 2324 - Peter Denning (02)4975 3729 4th Thursday of month, 7.30pm. Elermore Vale Community Centre, Croudace St, Elermore Vale.
- **ANOS Sydney Inc.**: 9 Alicia St, Glenwood NSW 2768 - Andrew Locke (02)8824 6338 3rd Friday each month, 8pm. Senior Citizens Hall, B.H. Community Centre, Conie Ave, Baulkham Hills.
- **ANOS Warringah Inc.**: PO Box 421, Forestville NSW 2087 - Bill Dobson (02)9981 2525 3rd Tuesday each month, 8pm. Community Hall, Starkey St, Forestville.

QUEENSLAND

- **ANOS Beenleigh Inc.**: PO Box 1130, Beenleigh QLD 4207 - David Cleal (07)3805 6865 1st Thursday each month, 7.30pm. Showground Hall, James St, Beenleigh
- **ANOS Kabi Inc.**: PO Box 424, Aspley QLD 4034 - David James (07) 3359 5752 2nd Tuesday of month except Jan., 7.30pm. Isabella Griffin Room, Strathpine Community Centre, 199 Gympie Road, Strathpine.
- **ANOS Mackay and District**: 24 Barton St, Mackay, QLD - Arthur Pinkney (07)4952 2186 2nd Thursday each month, Andergrove Community Centre, Celeber Drive, Andergrove.
- **ANOS Townsville Inc.**: 92 Curie St, Wulguru QLD 4811 - John Nuss (07)4778 4311 1st Tuesday monthly (excl. Jan.) 8pm Townsville O.S. Hall, Joe Kirwan Pk, cnr Bamford Lane & Charles St, Townsville
- **Native Orchid Society of Toowoomba Inc**. 106 Umbiram Rd, Wyreema QLD 4352 - Josie Wright (07)4696 2150 1st Friday of month, 7.30pm Lutheran Church Hall, cnr West and Alderley St, Toowoomba

SOUTH AUSTRALIA

- **Native Orchid Society of South Australia Inc.**: PO Box 565 Unley SA 5061 - Les Nesbitt (08) 8261 1550 4th Tuesday each month, 8pm. St Matthew's Hall, 67 Bridge St, Kensington.

VICTORIA

- **ANOS Geelong Inc.**: 609 South Street, Ballarat VIC 3350 - Anita Hinton (03) 9743 6040 2nd Wednesday each month, 7.30pm. Uniting Church Hall, Yarra St, Geelong.
- **ANOS Melbourne Suburbs Inc.**: PO Box 169, Bayswater VIC 3153 - Richard Johnson 04 7808 7752 4th Wednesday of month (excl. December), 7.30pm. Montrose Primary School, Leith Rd, Montrose 3765
- **ANOS Victoria Inc.**: PO Box 308, Boronia VIC 3155 - (03)9387 2771 1st Friday each month, 8pm. Toorak Uniting Church Hall, , 603 Toorak Rd, Toorak.

WESTERN AUSTRALIA

- **ANOS Western Australia Inc.**: Mrs Lyn Morgan, 99 Bywater Way, Wilson WA 6107 - (08)9451 2164 2nd Monday each month, 8pm. Wilson Community Hall, Braibrise Rd, Wilson.

NEW ZEALAND

- **ANOS New Zealand Native Orchid Group** 42 Titiro Moanna Rd, Korokoro, Lower Hutt 5012

Dendrobium Gerald McCraith Photo Roslyn Capell